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PUBLIC UTILITY VALUATION

EVERY consideration of valuation of a public utility, whether for the purpose of condemnation for purchase or as a basis for fixing rates or permitting the issue of stock or bonds, must start from *Smyth v. Ames*,¹ and the rule therein laid down by HARLAN, J., at page 546: "We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services are reasonably worth." In all the cases since that has proved a sufficiently comprehensive statement, and by the provision for "other matters to be regarded" it has proven sufficiently elastic for free development in the light of experience. The question here to be proposed is whether, in the light of the rich experience of the twenty years since *Smyth v. Ames*, it is not possible and desirable to adopt a narrow and definite rule, one not based on so many matters, with so much room for individual opinion, but on one matter that is capable of reasonable, definite ascertainment.

The United States Supreme Court was much troubled by the great question involved in *Munn v. Illinois*,² and some of the judges were, and long continued to be, filled with forebodings as to the plagues that might be let loose by the pronouncement of the majority of the court in that case, but it is safe to say not one of them foresaw what a field of inquiry the judges, trained in the law, but not in finance and engineering, must later enter because the court had decided that when property was devoted to a use in which the public had an inter-

¹ (1898) 169 U. S. 466.

² (1876) 94 U. S. 113.

est, it granted to the public an interest in that use and must submit to public control of the property for the common good, to the extent of such interest. That was forty years ago, but it was not until *Chicago, Milwaukee & St. Paul Railway Co. v. Minnesota*,³ thirteen years later, that it was settled that this control was subject to supervision by the courts to see that the legislature did not by that control in effect confiscate property, either by taking it, or by so reducing the rate of returns arising from its use as to make it of no value. Not only were the judges inexperienced in the extremely complicated problems connected with the value and earnings of the great public utility plants, but the courts and court procedure were ill adapted to deal with the questions involved. However, as has often been pointed out,⁴ the difficulty of the matter was no reason why the courts should shirk their duties, and under our system of government there seems to be no other safe final arbiter between the rights of the public and the rights of private property under our constitutional guarantees except our courts. They have of course been greatly aided in their work by the commissions, composed of men who acquire expert knowledge in this field, and whose findings in the great majority of cases are accepted, and in any case the legislature, the body with which *Munn v. Illinois* seemed to leave this control, was far more incapable of just and final judgment than are the courts.

And so it comes to pass that now, after about twenty-five years of experimentation, we have a pretty well defined field of public service problems, and an elaborate and measurably well adapted organization of commissions, with expert lawyers, engineers and economists, working under a body of fairly well understood principles.

The scope, limitations, and meaning of the various valuation theories suggested in the rule of *Smyth v. Ames* have all been many times sufficiently discussed, and are now so far agreed upon that they may be here assumed without elaboration. The cases following *Smyth v. Ames* have been so often gathered, especially by WHITTEN in his valuable volumes on "VALUATION OF PUBLIC SERVICE CORPORATIONS," that no effort will here be made to cite or notice cases except as they may be needed to develop the discussion, or may have been before the courts or commissions during the past two years. Special mention will be made of some of these most recent discussions. It has often been pointed out that it was very fortunate that the courts

³ (1890) 134 U. S. 418.

⁴ See for example *Chicago, M. & St. P. Ry. v. Tompkins*, (1900) 176 U. S. 167, 172, 179, per Brewer, J.

did not at the outset formulate a hard and fast rule. Is it not possible it may be equally unfortunate if we never arrive at a more definite rule than was desirable in the pioneer case of *Smyth v. Ames*? A study of the cases, with their varying standards and confused conclusions, makes clear the desirability of a sure basis that will not make price for condemnation or fixing a schedule of rates so much a matter of individual judgment of the commission or court before which the hearing is had, and so little determined by definite and certain facts and figures interpreted by fixed and equitable rules. This is reflected in many of the recent decisions of the courts, notably in the elaborately considered *Minnesota Rate Cases*⁵ and especially in the discussions of valuations by the various state commissions⁶ and the Interstate Commerce Commission. As long ago as 1903, in *In re Proposed Advances in Freight Rates*,⁷ the matter was thus stated by Commissioner PROUTY: "It is plain that until there be fixed, either by legislative enactment or judicial interpretation, some definite basis for the valuation of railroad property and some limit up to which that property shall be allowed to earn upon that valuation, there can be no exact determination of these questions. . In the absence of such a standard the tribunal, whether court or commission, which is called upon to consider this matter, can only rely upon the exercise of its best judgment." How unsatisfactory the commission has found this state of the rule is shown in many cases, such, e. g., as *In re Advances in Rates, Western Case, The Burlington's Claim*.⁸ Congress, in its recent order to the commission to value the railroads of the country, has not dissipated, though it has limited, this uncertainty by requiring the commission to ascertain and report in detail three cost values, i. e., original cost to date, the cost of reproduction new, the cost of reproduction less depreciation. In addition other values and elements of value affecting the ultimate facts of value are to be considered, so that this leaves us very much where we were with *Smyth v. Ames*. What final basis of valuation will be adopted does not certainly appear.⁹

Whatever weight in particular cases may have been attached to the various elements of the rule in *Smyth v. Ames*, a historical survey shows that from them two valuation theories, and only two have

⁵ (1913) 230 U. S. 352.

⁶ *Re Grafton County Electric Light & Power Co. (N. H.)* P. U. R. 1916E, 879, 883; *Public Service Commission v. Pacific Tel. & Tel. Co. (Wash.)* P. U. R. 1916D 947.

⁷ (1903) 9 I. C. C. Rep. 382, 404.

⁸ (1911) 20 I. C. C. Rep. 307, 337.

⁹ As to other statutes see *In re Blue Hill Street Ry. Co., (Mass.)* P. U. R. 1915E, 379; *Public Service Commission v. Pacific Tel. & Tel. Co., (Wash.)* P. U. R. 1916D, 947, in which the commission did not think the statute controlling in fixing value. Other cases will be noted later.

emerged with any following, viz.: the actual cost and the cost of reproduction, and it is only with some form of these valuation theories that we need concern ourselves in these pages. Market values as shown by actual sale,¹⁰ stock and bond issue,¹¹ or even earning capacity,¹² under exceptional circumstances may have been considered of controlling weight, but no court or commission has ever suggested these as the main guide in the normal case. Reference to a few cases will give the mere sketch that shows the trend.

In the *Railroad Commission Cases*¹³ the dissenting opinions of Justices HARLAN and FIELD show that already the question of value was coming forward as the basis of determining rate regulation. The majority opinion was written by Chief Justice WAITE, whose opinion in *Munn v. Illinois* led to such vast consequences. It is not strange that he did not find it necessary to consider value in rate cases. But HARLAN, J., in dissenting, said: "Would they [private capitalists] have risked the immense sums invested in these enterprises had the charters of the companies contained a provision making rates to depend, not on the capabilities, wants, and interests of the territory to be supplied with railroad service, or on the amount expended in constructing and maintaining these roads, but on their 'value' as estimated by commissioners, and on such basis as the latter, from time to time, might deem to be justified by 'experience and business operations?' Their value upon what basis, or at what period of their existence? When they were constructed? Or what they would bring at a sale under a decree of court?" Here we have a challenge from the very justice who afterward wrote the notable opinion in *Smyth v. Ames*,¹⁴ the great landmark in all valuation cases. And the value that appealed to him was not the present value, but the original cost, the amount adventured in the enterprise. In the same case FIELD, J., also dissented, saying,¹⁵ "Certainly no one will deny that the right to adopt a rate of charges, subject, as such rate always is, to the condition that they shall be reasonable, was of vital importance to the company. Without that concession no one acquainted with the difficulties, expenses, and hazards of the projected enterprise can believe that it would have been undertaken.

¹⁰ *Commercial Club v. Public Utilities Commission* (Mo.) P. U. R. 1915C, 1017, 1031; *Dow v. Beidelman*, (1887) 125 U. S. 680, cited in *San Diego Land & Town Co. v. Jasper*, (1902) 189 U. S. 439, 443.

¹¹ *San Diego Land & Town Co. v. National City*, (1899) 174 U. S. 739.

¹² *San Diego Water Co. v. San Diego*, (1897) 118 Calif. 556.

¹³ (1886) 116 U. S. 307.

¹⁴ (1898) 169 U. S. 468.

¹⁵ At page 343.

It was certainly the expectation of the constructors of the road that they should be allowed to receive compensation having some relation to its cost. But the act of Mississippi allows only such compensation as parties appointed by the legislature, not interested in the property nor required to possess any knowledge of the intricacies and difficulties of the business, shall determine to be a fair return on the value of the road and its appurtenances, though that may be much less than the original cost. Within the last few years, such have been the improvements in machinery, and such the decline in the cost of materials, that it is probably less expensive by one-third to build and equip the road now than it was when the contractors completed it. Does anybody believe that they would have undertaken the work or proceeded with it, had they been informed that, notwithstanding their vast outlays, they should only be allowed, when it was finished, to receive a fair return upon its value, however much less than cost that might be?" Here are the main points that were to be met with in the next thirty years. These judges dissented, and their view has remained in the minority. But now a change in the trend of prices puts a new economic front on the whole situation.

One of the earliest valuation cases was *Reagan v. Farmers Loan & Trust Co.*,¹⁶ in which it was held that when it appeared that the road cost far more than the stock and bonds outstanding, that such stock and bonds represented money invested in the construction, that there had been no waste or mismanagement, that rates had been continually lowered, and that the earnings for three years had been insufficient to pay the interest on the bonded debt, a tariff still further reducing the earnings was confiscatory. The prevailing idea seemed to be that, if possible without prejudice to the rights of the public, those who had invested in railroad enterprises should have some profit for the use of their money. Clearly here, though no specific theory was adopted, and no exact valuation was fixed, the court was thinking of return on the investment actually made, and not at all on reproduction value; and so in *Brymer v. Butler Water Co.*,¹⁷ the court thought the "cost of the water to the company includes a fair return to the persons who furnished the capital for the construction of the plant." To allow the public to take advantage of the fact that similar works at the present time could be constructed for far less than this did cost would be unjust.¹⁸

*Steenerson v. Great Northern Ry. Co.*¹⁹ may be taken as the best case of its type. In this case the investment theory, and capitaliza-

¹⁶ (1893) 154 U. S. 362.

¹⁷ (1897) 179 Pa. St. 231.

¹⁸ *San Diego Water Co. v. San Diego*, (1897) 118 Calif. 556.

¹⁹ (1897) 69 Minn. 353.

tion upon earnings as well, were urged upon the attention of the court. It emphatically rejected both, and also the amount of the stock and bonds. "The material question is not what the railroad cost originally, but what it would cost to reproduce it." The rights of bondholders are no more and no less sacred than the rights of other property owners. If the road was built when iron rails cost \$85 per ton and everything else in proportion, and now steel rails cost \$16 per ton, if it cost \$40,000 a mile to build the older portions of the road when last year as good a road was built for \$12,000, that is the misfortune of the owners who paid the higher prices. The state does not guarantee the investor in a railway more than in other property. The "cost of reproduction" must be estimated on a present cash basis.

It is very significant that the *Steenerson* case, and a number of others like it, arose in the hard times of the early nineties, when reproduction cost was very low and the public would be very averse to allowing earnings on the original cost, which was much higher. And here an enlightened unselfishness on the part of the public might have had its reward. It could not then, of course, be discerned that at the time that decision was being read prices were already mounting on a curve that has been rising almost continuously for twenty years, and that the question would soon be reversed so that the public would ask the railroads whether they were to be allowed to ask a return on the present high cost of everything entering into the construction of a road when the amount actually invested was but a fraction of present cost of reproduction. The same argument that had such weight in the *Steenerson* case was urged upon the court in a case decided the next year.²⁰ It was rejected as unjust and contrary to facts. "In countries conditioned as Texas has been and is, such a railroad property and business cannot be reproduced, except substantially in the same manner in which this has been produced. It is not only impracticable, but impossible to reproduce this road, in any just sense, or according to any fair definition of those terms. A system of rates based on such a narrow basis as that is confiscatory." The court here refers to the road as "a going business concern," using the term not as it is now so commonly used as a complement to reproduction-less-depreciation value, but as showing the utter injustice of the reproduction at present prices theory. Though this case was decided some months after *Smyth v. Ames* it does not refer to it, or seem to be influenced by it, which seems very extraordinary and altogether exceptional. Evidently the dominat-

²⁰ *Metropolitan Trust Co. v. Houston & T. C. R. Co.* (Dec. 1898) 90 Fed. 683.

ing influence of the rule in *Smyth v. Ames* was not yet appreciated, for another case²¹ in the same year, though it refers to *Smyth v. Ames*, decided in March, 1898, cites it only on the question of the rule as to reasonable rates, not on the great question of valuation. This case, too, rejected the cost of reproduction for the "amount really and necessarily invested in the enterprise." It insisted that the only way the consolidated road could have been built up was by buying out the old horse car lines and making junk of most of the old rails and equipment. To the \$5,000,000 cost of reproduction the court adds a lump sum of \$2,000,000 as the least addition, though the total cost seems to have been \$9,000,000. This is one of those guesses so often found in valuation cases, which has at least a chance of being within a few millions of correct, and which is a kind of average of various valuations. It answers here well enough because adding even this amount shows the proposed rates too low, and so it is not necessary to make more exact valuation.

The cost-of-reproduction theory was first urged by attorneys representing the public. The upward tendency in cost of construction and equipment soon made the public-utility attorneys urge the same thing, so that it is not strange to find the courts and commissions lending an ever readier ear to this basis of valuation and giving it an ever larger influence in determining value. There was not of course a change in the decisions in perfectly regular succession in point of time, but after *Smyth v. Ames* the tendency is marked to give cost-of-reproduction a growing importance. In *San Diego Land & Town Co. v. National City*,²² Justice HARLAN upheld the opinion of the circuit court in the same case²³ that it is the actual value of the property at the time the rates are to be fixed, and not its cost, that should form the basis on which to compute rates. "What the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public." It may have cost more than it ought to have cost and the bonds may be in excess of its real value. Justice HARLAN does not say what the allowance should be if it did not cost more than it ought to have cost, nor that reproduction value at present prices was the controlling consideration. Indeed the United States Supreme Court—fortunately as it seems to the writer—has never done that, but that was evidently the leading idea. This case was before the utilities were welcoming reproduction-cost, and the company was attacking it, but the Federal

²¹ *Milwaukee Electric Ry. & Light Co. v. Milwaukee*, (May 1898) 87 Fed. 577.

²² (1899) 174 U. S. 739.

²³ (1896) 74 Fed. 79.

courts, like the Minnesota court in the *Steenerson* case, refused to listen to the objections. Justice HOLMES in *San Diego Land & Town Co. v. Jasper*,²⁴ approved of the rule quoted above from the *National City* case as no longer open to dispute. Cost may be considered, but in the present case "it has very little importance indeed." And Justice PECKHAM in *Willcox v. Consolidated Gas Co.*²⁵ agreed with the court below (and with several intermediate cases in the Supreme Court) in holding that "the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase." He seems to sense the danger, not so far ahead, that the enormous increase in property valuation in the great cities might make the reproduction theory untenable as a prime test of valuation, and provides for a possible exception if the property should increase "so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public." He declines to pass upon what might be done in such a case. Is it too much to say that such cases have become so common as to make it necessary, if justice is to be done, to turn from the cost-of-reproduction theory as having any determining value in condemnation or rate problems today? In the *Consolidated Gas* case would the courts think it unjust to the public to increase the cost of gas to the public so as to allow for this increment of value, due not at all to anything furnished by the owners of the utility, but solely to the appreciation of property and materials? Cost of reproduction originally commended itself because "original cost" was considered untrustworthy. "Original cost may have been too great; mistakes of construction, even though honest, may have been made, which necessarily enhanced the cost; more property may have been acquired than necessary or needful for the purpose intended."²⁶ Some years of experience with valuation cases were needed to show how equally unreliable are cost-of-reproduction estimates, and how the uncertainties of original cost can be checked and corrected.

Without following in detail the course of the reproduction doctrine through the cases it will serve the present purpose to notice that impossible situations soon arose as prices appreciated after 1900, of which a good illustration may be found in *In re Advances*

²⁴ (1903) 189 U. S. 439.

²⁵ (1909) 212 U. S. 19.

²⁶ *Stanislaus Co. v. San Joaquin C. & I. Co.*, (1904) 192 U. S. 201, 214, per Peckham, J., who pointed to evidence of waste in mismanagement of \$350,000 in building a canal.

*in Rates—Western Case, The Burlington's Claim of Legal Right.*²⁷ The contention was that the road was entitled "as a matter of legal right to a fair return upon the actual value of its property used for transportation, which value from whatever source in the past created, is measured in its case by at least the cost of presently reproducing its physical plant." It represented that the Burlington road cost those who built it \$258,000,000, that it would cost to reproduce it \$530,000,000, to which should be added some amount for going-concern-value, and a further amount for franchise rights. This belongs to the owners and they are entitled to a fair return upon it, though much more than \$270,000,000 of it does not represent the investment of a dollar by the owners, and the road is now earning nearly 18% dividends on the stock, beside paying all interest on the bonds. Yet it seeks permission to raise its rates on the ground that it is an insufficient return on the actual fair value of the road as it exists today as a going concern, which is the sole inquiry open at this time. These contentions the Commission refused to approve.

Of course the Supreme Court has never gone so far as to approve reproduction cost as the sole test of value, and later when such a contention reached it in the *Minnesota Rate Cases*,²⁸ it was definitely rejected, as will be more fully pointed out hereafter. In the *Burlington* case, and still more in the *Minnesota Rate Cases*, the increased values were largely due to the enormous rise in property values in the great cities where these roads owned large terminals. But especially in the case of the Northern Pacific was involved a very large increase, along the whole right of way, of the values of land which had originally been given to the railroad by the government. If a valuation were to be made today it would include also a great increase in value of material and equipment, much of it due to an abnormal rise in prices during the past year. The present purpose is merely to point out the tendency and possible ultimate result of any adherence to the cost-of-reproduction theory as the basis, or most important guide, in the valuation of public utilities. It is not strange, therefore, to find some very late cases showing a tendency to abandon this view in favor of something like the earlier contentions of the companies as shown in the *Houston & T. C.* case, *supra*. It has been very well expressed by the New York Public Service Commission:²⁹ "The fair amount of the investment upon which the return should be computed, may be better ascertained by giving

²⁷ (1911) 20 I. C. C. Rep. 307, 337, per Commissioner Lane.

²⁸ (1913) 230 U. S. 352, 455.

²⁹ (1915) *Fuhrman v. Cataract Power Co.*, 3 Pub. Serv. Com. Rep. (2nd Dist.) 656.

greater weight to the actual cost as the basis of inquiry than in any other way."³⁰

Having followed in a general way the struggles of the contending ideas, we may now consider briefly the advantages and disadvantages of the two theories as they are brought out by the cases. It may be admitted at once that very great difficulties inhere in valuation problems, and there is no prospect that any rule can be devised that will entirely eliminate them. Some objections to the actual cost theory have already been noticed.³¹ The chief additional objections are that actual cost covers much that has become worn out and obsolete, that owing to complicated organization and reorganization, consolidations and holding companies, it is impossible to ascertain in many cases the cost of the utility serving a particular community, and most fatal of all that books have been destroyed, or if preserved so kept that it is impossible to determine with any accuracy what the actual cost has been. Moreover, in many cases there have been foreclosure sales which have entirely eliminated all original investors and all holding under them, and it is urged that where such sales have been made the purchaser is entitled to the advantage of his bargain if he paid less than actual value, just as he would have to bear his loss if he had paid too much.³²

We must take a closer look at the workings of the cost-of-reproduction theory, or the cost-of-reproduction-less-depreciation theory, a theory which has been supposed to show more than any other the "value of the property at the time it is being used for the public." The problem has been comprehensively stated thus: "The basis of all calculations as to the reasonableness of rates is the fair value of the property used for the convenience of the public,—not its cost, nor the amount of money expended upon it, but its value as a producing factor, taking into consideration its location, character of the country through which it passes, and the reasonable expectation of business coming to it. * * * It may have—indeed, probably has—cost more than this [the value found by the master]. But, in estimating the value of the property, we must take, not what was its value in the past, nor what it cost, nor what it would cost to duplicate it, nor its probable future value, but the estimate must be based on its present value,"³³ i. e., we may assume from most cases, a value

³⁰ Quoted with approval in *Herman v. Newton Gas Co.* (N. Y.) P. U. R. 1916D, 825, 840. Further cases will be noticed later.

³¹ see especially *Stanislaus Co. v. San Joaquin C. & I. Co.*, (1904) 192 U. S. 201, 214, which has been considered as the final rejection of the actual cost theory.

³² *Steenerson v. Great Northern Ry. Co.*, (1897) 69 Minn. 353; *Cumberland Tel. & Tel. Co. v. Louisville*, (1911) 187 Fed. 7.

³³ *Matthews v. Board of Corp. Com'rs of North Carolina*, (1910) 106 Fed. 637.

fixed by considering all the matters suggested in *Smyth v. Ames*, but chiefly the cost of reproduction, less depreciation, plus certain added elements discovered in different cases that make up its value as a producing factor, as a live, going business.³⁴ Actual cost, stock and bond issue, probable earning capacity, have nothing to do with this problem except as they may furnish evidence more or less, and usually less, valuable as to the present value of the plant being used in the public service. Earning capacity might seem to have much to do with value as used in reference to an ordinary business, but not as to a public utility whose earnings are subject to be fixed by public regulation. Of course earning capacity cannot fix value when it is settled that value is the basis for fixing earnings.³⁵

There can be little doubt that the cost-of-reproduction theory, as now applied, is by most courts and commissions given large, if not controlling, influence in valuations, either for purposes of condemnation or fixing rates.³⁶ Engineers very naturally prefer it. Any other theory would largely eliminate the engineer to make place for the accountant, certainly after once a base valuation has been fixed. Present methods make abundant employment for both, and for lawyers as well. They are good for these professions, if not for the companies and the public. Commissions follow cost-of-reproduction largely, but not exclusively, and have worked out elaborate rules and formulae to be used in ascertaining the various elements entering into such a valuation.³⁷

And yet the Interstate Commerce Commission has balked at the results of following it to its logical end,³⁸ and is now under mandate from Congress to value the railroads of the country by each theory. State statutes often require consideration of the various kinds of valuations.³⁹ The Supreme Court of the United States has persisted in its declaration, first laid down in *Smyth v. Ames*, as to consider-

³⁴ *Knoxville v. Knoxville Water Co.*, (1909) 212 U. S. 1.

³⁵ *Spring Valley Water Works v. San Francisco*, (1911) 192 Fed. 137; *Re Proposed Advances in Freight Rates* (1903) 9 I. C. C. Rep. 382, 403.

³⁶ See *Pioneer Tel. & Tel. Co. v. Westenhaver* (1911) 29 Okla. 429, 434; *Re Chesapeake & P. Tel. Co. (Md.)* P. U. R. 1916C, 925, 944; *Legal Basis of Rate Regulation*, 11 Col. L. Rev. 532, 545, and cases cited.

³⁷ *In re Janesville Water Co. (Wis.)* P. U. R. 1915A 178; *Springfield v. Springfield Gas & El. Co. (Ill.)* P. U. R. 1916C, 281, 362, criticising the Wisconsin method of computation.

³⁸ *Re Advanced Rates—Western Case* (1911) 20 I. C. C. Rep. 337.

³⁹ See *Re Grafton County L. & P. Co. (N. H.)* P. U. R. 1916E, 879 at 883, as to the New Hampshire statute; *Re Dunham (Mo.)* P. U. R. 1916E 544, at 596 and *Re St. Louis & S. F. R. Co. (Mo.)* P. U. R. 1916F 49 as to the Missouri statutes; *Public Service Comm. v. Pacific Tel. & Tel. Co. (Wash.)* P. U. R. 1916D 947, holding that the Washington statute does not prevent the Commission from adopting some other basis than those named in the statute in fixing the value.

⁴⁰ (1898) 169 U. S. 466.

ing all theories, and in the recent important *Minnesota Rate Cases*⁴¹ definitely declines to consider reproduction value at whatever point its results would lead to values the court considers not fair. Truly this is an uncertain and indefinite situation that calls for some more stable basis, if any there be. It is not strange to find such a protest against the cost-of-reproduction method as was made only July last by the New Hampshire Commission⁴² in which it definitely refused to consider as valuable assumptions based on things that never happened, and estimates requiring the projection of the engineering imagination into the future, and methods of construction and installation that have never been and never will be adopted by sane men. Moreover, when the opposing sides employ each its own experts the valuations differ widely in results, and the commission's own experts are so far from any of those, and the trial courts often from all of them, and the court of last resort not infrequently from the determinations of the lower court, not merely on unimportant items, but on the fundamental things that decide the case, that conditions result fit for a kingdom of Chaos but not for a regulated society. Is this due to difficulties inherent in the subject, or to a failure thus far to adopt theories and methods sound in principle and certain and practical in operation?

An examination of values found by the reproduction theory shows at once what a wide and wild field for guessing it affords. A few illustrations will suffice. Many could be given. In *Cedar Rapids Gas Light Co. v. Cedar Rapids*,⁴³ the plant had cost \$267,000, had been assessed for valuation on the sworn statements of its president at \$108,000, which was raised by the taxing board to \$250,000, and was now claimed by the company on its engineers' reproduction valuation to be worth \$368,000. On this showing the court guesses a fair valuation as \$300,000 to \$350,000. So far as appears a guess at \$250,000 would have been equally binding and justified. In *Willcox v. Consolidated Gas Co.*⁴⁴ real estate was valued at \$11,985,435, plants at \$15,500,000. Justice PECKHAM points out that both these valuations depended largely upon the opinions of expert witnesses as to the value of that kind of property, which differed quite radically from the estimates of defendant, and therefore were more or less in doubt. "It, in other words, becomes a matter of speculation or conjecture to a great extent." In a recent California case⁴⁵

⁴¹ (1913) 230 U. S. 352, 455.

⁴² *Re Grafton County L. & P. Co.* (N. H.) P. U. R. 1916E, 879 at 882.

⁴³ (1909) 144 Iowa 426.

⁴⁴ (1909) 212 U. S. 19.

⁴⁵ *Re Marin Municipal Water Dist.* (Calif.) P. U. R. 1915C, 433 at 452.

five expert engineers turned in valuations of \$919,204, \$1,031,436, \$670,163, \$723,001.85, and \$763,028, showing a difference between the lowest and the highest of \$361,273 or more than 50%, and this not at a time when valuations had just begun and methods were undeveloped, but only one year ago. We need not be surprised to find, as we do, such wide variations in results in *Smyth v. Ames* in 1898, but what shall be said when it appears we are not approaching more settled conditions in 1915? In many details engineers have worked out the problem, but on the total result we seem as far away as ever. Indeed in a typical and recent Illinois case,⁴⁶ there were five appraisers, no two used identical theories, and the results were \$547,488, \$588,262, \$806,404, \$898,785, and \$940,988, the highest lacking not much of double the lowest. On the various and sundry theories under which the appraisers worked the commission thought a volume could easily be written.⁴⁷ The Wisconsin Commission finds high grade experts differing widely in giving evidence on values when they are called by private interests, and the fact that they "were disinterested and were employed by the state does not seem to have affected the rule" for one expert put the value of the property at \$1,100,000, or \$400,000 in excess of the value fixed by another.^{47a}

If this were true of the tangible, how much more of the intangible values. It is believed that these wide differences in valuation by experts for the company and for the public are present in every case except where the experts agreed to work together, as in a recent Maryland case.⁴⁸ "Skilled witnesses come with such prejudice in their minds that hardly any weight should be given to their evidence."⁴⁹ Findings on such conjectures give little assurance that the case will be rightly decided unless it can be said that the compromise figure of the court or commission will be a fair guess,⁵⁰ or in cases where, even taking the highest or lowest figures as correct, it is clear

⁴⁶ *Springfield v. Springfield Gas & El. Co. (Ill.)* P. U. R. 1916C, 281 at 305.

⁴⁷ See also *Re Cripple Creek Water Co. (Colo.)* P. U. R. 1916C, 788 at 797.

^{47a} *Duluth St. R. Co. v. Railroad Commission (Wis.)* P. U. R. 1915D, 211.

⁴⁸ *Re Chesapeake & P. Tel. Co. (Md.)* P. U. R. 1916C, 925.

⁴⁹ *Baxter v. C. & N. W. Ry., (1899)* 104 Wis. 307, 331, approved in *Appleton Water Works Co. v. Railroad Comm. (1913)* 154 Wis. 121, 154, quoting Lord Campbell in *Tracy Peerage Case*, 10 Clark & Fin. 154, 191.

⁵⁰ The supposition that striking averages will give correct results is called absurd and childish in *Re Chesapeake & P. Tel. Co. (Md.)* P. U. R. 1916C, 925 at 945. The commission in that case thought it relieved of this childish result because the engineers worked together and presented an agreed valuation. But is it so certain the engineers did not reach this agreement by the same striking of averages? Why should they agree here, when working independently they differ so widely?

the contentions of the party relying on such figures must fail.⁵¹ Often a case resolves itself into a contest between the engineers of the company and of the public, in which the opposing lawyers are further contestants.⁵²

Every item entering into this valuation is subject to the same wide differences in estimates, some authorities rejecting entirely and others granting various allowances for engineering and superintendence, contractors' profits, interest and taxes during construction, promoters' profits, legal expenses, working capital, and—lest anything be overlooked—an item for blanket allowances.⁵³ Especially is this true as to depreciation, and going value or going concern value. The utter uncertainty of depreciation allowances is constantly shown. It seems to be settled that allowances for depreciation must be made,⁵⁴ and yet many urge, with good effect, that in many plants in which annual upkeep is properly maintained there is not only no real depreciation, but a real appreciation.⁵⁵ The life of iron pipe has been estimated at thirty years, fifty years, seventy-five years, but who can say? Admittedly engineers do not know. It may last a thousand years.⁵⁶ Other parts of a plant are much more destructible and admit of closer approximation as to efficient service. It may be possible to say that street railway equipment must be renewed on the average once in twelve years, and if so depreciation can be determined with accuracy as to such property. The plant of a gas or water company is far otherwise.⁵⁷

The speculative and uncertain nature of going value extends to its meaning, which is rarely twice the same,⁵⁸ and to its amount, which has been said to vary from 5% to 30%.⁵⁹

⁵¹ See *Willcox v. Consolidated Gas Co.* (1909) 212 U. S. 19, and *Knoxville Water Co. v. Knoxville* (1909) 212 U. S. 1.

⁵² *In re Janesville Water Co. (Wis.)* P. U. R. 1915A, 178 at 201; *In re Northampton Gas Petition (Mass.)* P. U. R. 1915A, 618 at 626; *Meek v. Consumers' Electric L. & P. Co. (Mo.)* P. U. R. 1915A, 956 at 966; *Springfield v. Springfield Gas & El. Co. (Ill.)* P. U. R. 1916C, 281 at 308.

⁵³ Compare the estimates of \$151,560.86 and \$49,254 by two engineers and their allowances and disallowances in *Commercial Club v. Public Utilities Commission (Mo.)* P. U. R. 1915C, 1017 at 1034, typical of many cases that might be cited. See note to *Cedar Rapids Gas Light Co. v. Cedar Rapids*, (1909) 144 Iowa 426, 48 L. R. A. N. S. 1025 at 1037 and cases cited.

⁵⁴ *Knoxville Water Co. v. Knoxville*, (1909) 212 U. S. 1, 10.

⁵⁵ *Minnesota Rate Cases* (1913) 230 U. S. 352, 456.

⁵⁶ *In re Janesville Water Co. (Wis.)* P. U. R. 1915A, 178 at 191.

⁵⁷ *Milwaukee Electric R. & L. Co. v. Milwaukee* (1898) 87 Fed. 577, 583; *In re Janesville Water Co. (Wis.)* P. U. R. 1915A, 178 at 202.

⁵⁸ *Des Moines Gas Co. v. Des Moines* (1915) 238 U. S. 153; *Springfield v. Springfield Gas & El. Co. (Ill.)* P. U. R. 1916C, 281 at 358; *Re Los Angeles (Calif.)* P. U. R. 1916F, 593, 664 ff.

⁵⁹ *Appleton Water Works Co. v. Railroad Commission* (1913) 154 Wis. 121, 146, 154.

When courts, after giving the experts their innings, attempt to eliminate speculative uncertainties and give the problem of going value "pretty close mathematical solution" the result does not represent all that has been treated as going concern value, but only capitalization of deficits in early years of operation. These may have been made up by excess earnings later, they may have never actually existed, or they may have been due to bad management or judgment, in all of which cases they should not be allowed any value.⁶⁰ Some courts, however, insist that they shall not be offset from later earnings, but shall be capitalized as part of the plant on which earnings may be perpetually continued.⁶¹ It seems now to be decided by the United States Supreme Court in *Des Moines Gas Co. v. Des Moines*,⁶² that there is no fixed rule for determining "going concern value," but each case must be determined on its own circumstances. This is certainly a refusal to consider that it can be determined with exactness. It seems to depend on the judgment of the appraisers in each case, and in the *Des Moines* case the court refused to presume it had not been sufficiently allowed for, although the master had expressly refused to make any further allowance for "going value" after he had made allowance for overhead charges. He found it would cost to reproduce the plant new \$1,975,026. To this he added overhead charges, 15%,—\$296,254. He then deducted depreciation, \$333,878 and fixed the valuation at \$1,937,402. Of course each of these items was found on what seemed to the master sufficient principles, yet each involved a very large element of judgment, and it is fairly inferable from the language of the court that if the master had added \$300,000 to the figures instead of rejecting that amount, the court would not have felt inclined to disturb his findings. This is a very large difference, and yet it is matter of everyday experience that experts in their findings differ much more than this on reproductions, overheads, going concern value, etc. Fifteen percent for overheads is a lump guess. Twelve percent would pass as well, or ten percent, or twenty. Moreover, the whole matter of reproduction takes one into a field of the imagination and into speculations on conditions and values of which there are abundant illustrations in the *Minnesota Rate Cases*.⁶³ It is one of the interesting features of allowance of these theoretical expenses that

⁶⁰ *People v. Willcox* (1914) 210 N. Y. 479, quoted in *Hermann v. Newton Gas Co.* (N. Y.) P. U. R. 1916D, 825 at 832; *Re Portland Ry. L. & P. Co. (Ore.)* P. U. R. 1916D, 976 at 1050.

⁶¹ *Appleton Water Works Co. v. Railroad Commission* (1913) 154 Wis. 121, 154; *People v. Willcox* (1914) 210 N. Y. 479.

⁶² (1915) 238 U. S. 153.

⁶³ (1913) 230 U. S. 352 at 452.

in most cases they were never as matter of fact incurred on the capital account.⁶⁴ Insofar as they have been incurred at all they have been charged to current expense and paid for by the public, which is now asked to pay again in rates, or upon purchase price in condemnation. This is particularly true of utilities that have had a gradual growth through many years, not so much of the few that have been developed on a large scale within a very short period. Engineers, lawyers, superintendents, are ordinarily carried on the payroll, and construction work is done by the company and not by contractors who must have a contractor's profits. Of course there are numerous exceptions, but they should not make the rule.⁶⁵

This brief notice of current valuation cases, which is intended to be neither a discussion of principles nor a review of even the most important cases, but merely a look at some typical cases to see the difficulties and wild uncertainties of present methods, we may conclude with what we may term a confession, in one of the best known recent decisions. "The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts."⁶⁶ If so, it must be that HARLAN, J., was certainly right in saying that what are the necessary elements in such an inquiry is always an embarrassing question. But why should it be? Must it forever so remain? Is it impossible to make the value of a plant a matter of bookkeeping, to be settled by a rule-of-thumb, if you please, with a result that is fair and not utterly speculative? It may be admitted that the difficulties are great and that the end cannot be attained at once, but present methods do not have even a tendency toward a settled condition. Indeed, they insure the very reverse, for the most serious objection to the use of reproduction-cost as an important element of valuation is that the appraisal is not completed before it is worthless. Present value on such a basis is one thing today, another tomorrow, and different on every future day. Of what value today is an appraisal of reproduction cost completed last March? Prices of everything entering into the cost of a utility have been increased from ten to several hundred percent.⁶⁷ Operating expenses must always fluctuate, and when we add the uncertainty of an ever changing value on which earnings are to be

⁶⁴ *In re Blue Hill Street Ry. Co.* (Mass.) P. U. R. 1915E, 370 at 384; *Hermann v. Newton Gas Co.* (N. Y.) P. U. R. 1916D, 825 at 840.

⁶⁵ *Hermann v. Newton Gas Co.* (N. Y.) P. U. R. 1916D, 825 at 839, 841.

⁶⁶ *Minnesota Rate Cases* (1913) 230 U. S. 352 at 434.

⁶⁷ *Springfield v. Springfield Gas & El. Co.* (Ill.) P. U. R. 1916C, 281 at 312, quoting discussion in United States Senate over Railroad Valuation Bill, Congressional Record 3801.

allowed, we are not surprised that the Interstate Commerce Commission does not complete one long and tedious hearing on petition for an advance in rates until another is filed for hearing. As pointed out by Commissioner Lane, in *In re Advanced Rates—Western Cases*,⁶⁸ the only check on an advance in rates because of the enormous increase in values is the principle that the charges must be reasonable to the public, even though the utility cannot earn a reasonable return on the fair value of the property being used for the public. But if anything could be more uncertain than the elements already considered, it is this question of what charge is reasonable to the public. Is it reasonable to carry a message from New York to San Francisco for twenty-five cents? Surely, if it is to go by special messenger the charge is ridiculously low, and our fathers paid that price for carrying a letter a few miles. But now we pay two cents. In *Cotting v. Kansas City Stock Yards Co.*,⁶⁹ it seemed to Justice BREWER that a rate of eighteen cents and five mills per capita for caring for cattle was so small as to suggest, certainly, no extortion. But we should say today that the smallness of the charge is no criterion if a lesser rate would yield the public utility a proper return. And Lord Chancellor SELBORNE⁷⁰ thought if it could not be said any particular toll for the use of the bridge could be said to be unreasonable in view of the service rendered and the benefit received, it was most extraordinary to complain and seek to examine the profits of the bridge company, unless the case could be imagined where the profits should be enormously disproportionate to the money laid out. But that he considered merely imaginary. How soon the courts pronounced otherwise! The fact is the rate that is reasonable to the public in the normal case is the rate for which the company can afford to render the service, as is shown by all the recent cases. To be sure it is said that if a line is laid out with poor judgment so that it cannot pay without unreasonable charges the owners have no right to insist on the return. But it is difficult to find an instance where the court in such a case has upheld a reduction in rates because the proposed charge was unreasonable to the public.⁷¹ As a practical working principle the doctrine that rates must be reasonable to the public as to the charge for the individual service is of very narrow application and has been involved in few

⁶⁸ (1911) 20 I. C. C. Rep. 307.

⁶⁹ (1901) 183 U. S. 79, 98.

⁷⁰ *Canada Southern Ry. v. International Bridge Co.* (1883) 8 A. C. 723, 731.

⁷¹ See *Reagan v. Farmers' Loan & Trust Co.* (1894) 154 U. S. 362; *Smyth v. Ames* (1898) 169 U. S. 466, 574; *Re Advanced Rates—Western Case* (1911) 20 I. C. C. Rep. 307, 337.

cases.⁷² This rule is no safe protection against raising of rates because of increases in valuation.

In conclusion may we hope for the adoption of one clear and definite theory of valuation to the exclusion of all others, except as they may be needed, for a time, in checking uncertainties or supplying deficiencies because of lack of reliable records or proper systems of accounting? A satisfactory answer to this question must rest on something more fundamental than a comparison of the workableness and relative advantages of the various theories. It must rest upon the basic principles of the relations of the public to public utilities. A public utility is something the public needs. It may build the utility as a public enterprise or leave it to private capital. If it pursue the latter course it practically says to capital, construct and manage the utility reasonably and the public will make every reasonable effort to insure a fair return on the investment. Fancy prices and fancy profits alike are not allowed, but steady, reliable promise should attract capital. The returns should be primarily what is fair, first and foremost, to the public, and second to the public service, in every case to both, if possible. Enough has been said about what is fair to the public, the rate must be reasonable. Then, if consistent with such reasonable charge to the public, the public must allow the service to earn a reasonable return. But on what? Much of the difficulty here arising is due to a failure to distinguish between investment in private and in public enterprises. Public utilities have been speculated in like private business adventures, but nearly always with results disastrous to the public receiving the service, and to most of the public investing in the securities. What the public needs is a stability in the public service property that will attract sufficient capital to furnish satisfactory services.⁷³ The great majority of those furnishing the capital seek a safe and sure return, not on speculative values but on money adventured. The few who may have grown very rich or very poor in speculations in public utilities may be dismissed. Their interests are usually adverse to the good, alike of the public and the ordinary stockholder. Our public utilities today are maintained on money furnished by many millions of our people, and it is desirable that it should be so. To secure this there should be reasonable assurance to investors of fair earnings. On what? Why, on the investment, on what (under proper conditions) has been put into the public use.

⁷² See *Kennebec Water Dist. v. Waterville* (1902) 97 Me. 185; *In re San Jose Water Co.* (Calif.) P. U. R. 1915E, 706 at 711; *Re Portland Ry. L. & P. Co.* (Ore.) P. U. R. 1916D, 976 at 1046.

⁷³ See: *Legal Basis of Rate Regulations*, 11 Col. L. Rev. 532 at 540.

In this connection the use of the terms "value" and "valuation" is unfortunate. It is not value in any ordinary sense that is being sought, as has often been noticed.⁷⁴ The basis for all dealings involving purchase and rate making should be, not actual cost, not reproduction cost, not market value, not stock and bond issue. It should be what has been well called the "efficient investment,"⁷⁵ i. e., the actual amount honestly and prudently invested in the utility, under normal conditions; no more, no less.⁷⁶ The "efficient investment" theory eliminates all consideration of losses due to mismanagement. Those must be charged against stockholders. "The company is held to the same standard of honesty and prudence in the management and maintenance as in the original acquisition of its properties."⁷⁷ It takes no account of bad property investments,⁷⁸ it eliminates all the objectionable elements that have been urged against the actual cost theory. As it has been stated in a recent case by the Washington Commission, "it would seem equitable, just and fair that the public should be required to furnish fair, just and reasonable compensation for the reasonable and necessary detriment a utility has suffered by reason of its service to the public."⁷⁹

But not only is a fair return on the "efficient investment" fair and just, its practical advantage is that it is a fixed and not a shifting thing. Reproduction value is as unstable as water. Efficient investment represents, not what the public does for the property of the company, but what the company does for the public. It does not depend on money market, or rates, or market prices of labor or material, or on values created by the public and not by the service. It does not change with hard times, or shifting population, or the fickle and varying judgments of appraisers or courts. It is a certain and fixed amount which is determined for all time. It is only a matter of proper bookkeeping to keep it up so as to show its amount as of any given date.⁸⁰ It is a standard, fixed, natural, "rate base" from which the service flows, and on which all relations between the

⁷⁴ Buffalo Gas Case, (2nd Dist., N. Y. 1915) 3 P. S. C. R. 353, 644, approved in *In re Blue Hill St. R. Co.* (Mass.) P. U. R. 1915E, 370 at 395; *Public Service Comm. v. Pacific Tel. & Tel. Co.* (Wash.) P. U. R. 1916D, 947 at 954; *Re Chesapeake & P. Tel. Co.* (Md.) P. U. R. 1916C, 925 at 946.

⁷⁵ *Re Portland Ry. L. & P. Co.* (Ore.) P. U. R. 1916D, 976 at 1047.

⁷⁶ *Middlesex & Boston Rate Case* (1914) 2 Mass. P. S. C. R. 105, approved in *In re Blue Hill St. R. Co.* (Mass.) P. U. R. 1915E, 370 at 379. Cf. *Re Chesapeake & P. Tel. Co.* (Md.) P. U. R. 1916C, 925 at 948.

⁷⁷ *In re Blue Hill St. R. Co.* (Mass.) P. U. R. 1915E, 370 at 398.

⁷⁸ *In re Crownover Tel. Co.* (Neb.) P. U. R. 1915E, 571 at 574; *Minnesota Rate Cases* (1913) 230 U. S. 352.

⁷⁹ *Public Service Comm. v. Pacific Tel. & Tel. Co.* (Wash.) P. U. R. 1916D, 947 at 955.

⁸⁰ *Duluth St. Ry. Co. v. Railroad Commission* (Wis.) P. U. R. 1915D, 192 at 209.

service and the public should rest. "The old methods have proven uncertain, indefinite, and unsatisfactory to honest utilities and commissions alike. Their chief use has been to furnish an easy method to conceal inflated values and dubious financial transactions." A method is needed "that will eliminate speculation, allow the honest investor to prosper, and destroy the crooked financier."⁸¹

It cannot be urged that the adoption of the "efficient investment" as the valuation base would not be attended with difficulties. But they are no greater than have attended all fair value computations on the indefinite rule of the past, even when the cost-of-reproduction-less-depreciation, and plus some uncertain, but considerable, other items has been adopted.⁸² And once the initial difficulties are past, what was before all uncertainty and matter of dispute becomes as certain as ledger balances. The first embarrassment arises from past poor bookkeeping or loss or destruction, sometimes wilful, of records. But records are now being preserved, and public utilities can be, as railroads now are, required to keep and render such accounts as may be completely adequate to show all future additions to efficient investment account. Indeed the situation has measurably cleared up already with reference to great classes of utilities, and especially as to all public utilities in states where commissions have for some years had accounting reduced to a system.⁸³

The other chief obstacle, arising from holding companies, reorganizations, uncontrolled issue of securities, is, like the bookkeeping, already in process of proper regulation, and as to the future can easily be reduced to order and certainty.⁸⁴ The great initial difficulty lies in getting a starting point from which to apply the method. Where the amount of the efficient investment is wholly uncertain, and in the absence of any reliable data, it is clear that some basing figures must be arrived at, and from that on all may be clear sailing.⁸⁵ To reach such a figure, in cases where direct evidence of efficient investment is lost or unreliable, it is very likely best to follow the suggestion of *Smyth v. Ames* and consider various methods of valuation, but all these should be judged with a view to determining, not the present cost of producing such a plant, but as nearly as

⁸¹ Reynolds, Chairman of Washington Public Service Commission, in *Public Service Comm. v. Pacific Tel. & Tel. Co.* (Wash.) P. U. R. 1916D 947. See also *Hermann v. Newton Gas Co.* (N. Y.) P. U. R. 1916D, 825 at 839, 840; *Springfield v. Springfield Gas & El. Co.* (Ill.) P. U. R. 1916C, 281 at 314.

⁸² *In re Janesville Water Co.* (Wis.) P. U. R. 1915A, 178 at 183.

⁸³ *Public Service Comm. v. Pacific Tel. & Tel. Co.* (Wash.) P. U. R. 1916D, 947 at 956.

⁸⁴ See *Commercial Club v. Missouri Public Utilities Comm.* (Mo.) P. U. R. 1915C, 1017 at 1031; *In re Northampton Gas Petition* (Mass.) P. U. R. 1915A, 618 at 626.

⁸⁵ *As in Willcox v. Consolidated Gas Co.* (1909) 212 U. S. 19, 43; *Minnesota Rate Cases* (1913) 230 U. S. 352, 440.

possible the efficient investment in such plant, for that is the fair value of what is being used at the present time for the public.⁸⁶ This would exclude all wornout and cast-off equipment. This should have been wiped off the books by annual allowance for depreciation, and if it has not been done the stockholders cannot ask the public to capitalize this as a basis for future earnings. It would leave out all losses from mismanagement, for they do not represent efficient investment.⁸⁷ It would omit all earnings put back into the plant even though the stockholders might have had a right to take them out in the form of dividends, but did not. It would deduct for depreciation in plant which should have been kept up out of earnings, but which has been deferred for dividends.⁸⁸ It would refuse return on property purchased for future need until such property is actually used for the public.⁸⁹ It might add another item to those named by Justice HARLAN in *Smyth v. Ames*, viz., the known efficient investment in other similar plants with such allowances for dissimilarity as seems called for.

All this would involve judgment, and uncertainty, and conflicting views of experts, at this point of departure, but only in cases where accurate figures are not available. And this uncertainty once fixed, the future is definite. The vice of present methods is not merely their uncertainty, but the fact that they fail to lead toward either certainty or stability. Finally, this efficient investment would be subject to the familiar check that the public cannot be charged more than the service is worth, even though the utility fails to earn a fair return. As has been shown, this is a slender reed on which to rest, but it is as good under this theory as under any other, and occasionally it may be applied.⁹⁰ In securing this base valuation, insofar as it may be necessary to use the reproduction cost, the figures should be based, not on the cost at a particular date, but on the average cost for a number of years, preferably, if possible, the years during which the installations were being made. This would avoid great injustices that might arise to the utility by valuations based on costs in 1893 to 1896, and to the public by using 1916 prices.⁹¹

⁸⁶ See *In re Portland Ry. L. & P. Co. (Ore.)* P. U. R. 1916D, 976 at 1013; *Springfield v. Springfield Gas & El. Co. (Ill.)* P. U. R. 1916C, 281 at 314; *Bogart v. Wisconsin Tel. Co. (Wis.)* P. U. R. 1916C, 1020 at 1037.

⁸⁷ *Re Falls Light & Power Co. (Wis.)* P. U. R. 1916D, 151 at 164.

⁸⁸ *Knoxville v. Knoxville Water Co. (1909)* 212 U. S. 1, 13; *Butler v. Lewiston, A. & W. St. Ry. (Me.)* P. U. R. 1916D, 25 at 45.

⁸⁹ *Minnesota Rate Cases (1913)* 230 U. S. 352 at 467.

⁹⁰ *In re Portland Ry. L. & P. Co. (Ore.)* P. U. R. 1916D, 976 at 1046; *Duluth St. Ry. Co. v. Railroad Comm. (Wis.)* P. U. R. 1915D, 192 at 205.

⁹¹ See *In re Northeastern Oil & Gas Co. (Ohio)* P. U. R. 1916D, 692 at 695; *In re Portland Ry. L. & P. Co. (Ore.)* P. U. R. 1916D, 976 at 1047; *Knoxville v. Knoxville Water Co. (1909)* 212 U. S. 1 at 15.

If it be urged that the courts and commissions by decisions for twenty years are bound to other methods, and changes can be made only by statute, the answer is that statutes may be necessary in some jurisdictions, but the whole matter of theories and definitions is still so uncertain⁹² that most courts and commissions are fairly free to adopt this one base, using other matters only in doubtful cases to aid in fixing this base. Not a few commissions, with a desire born out of the chaos of present methods, are turning to it. The view of Commissioner REYNOLDS in *Public Service Commission v. Pacific Tel. & Tel. Co.*,⁹³ has already been extensively quoted from. It reached the writer after this article had been largely completed, and shows the relief the Washington Commission felt to have the utility come before it with a frank statement, and submit "actual performance, segregated or separated in accordance with Interstate Commerce accounting, supplemented by such state commission accounting as may be essential," giving "an array of facts as distinguished from an array of opinion, expert or otherwise, that ought to be the recourse for constructive and efficient regulation." The New York Commission regards it with high favor in a very recent case;⁹⁴ the Indiana Commission regards it as "very valuable evidence" when it can be ascertained;⁹⁵ the New Hampshire Commission as late as July 15, 1916, pointed out the absurdities of the cost-of-reproduction method, which it characterizes as "all speculation and conjecture;"⁹⁶ the Missouri Commission considers original cost to date as determined by competent auditing as affording "most satisfactory evidence as to value, based as it is on *facts* capable of more or less exact determination, under proper accounting methods,"⁹⁷ the Massachusetts Commission regards cost of reproduction with suspicion and favors what seems very like "efficient investment;"⁹⁸ in Nevada the reproduction theory was rejected in a late case for the investment;⁹⁹ the Maine Commission refuses to consider reproduction-cost where original cost can be ascertained with substantial accuracy;¹⁰⁰ as does the Colorado Commission.¹⁰¹ These are all very late cases, to which others might be added. The efficient investment base is strongly approved by legal writers who have given

⁹² See *In re Portland Ry. L. & P. Co. (Ore.)* P. U. R. 1916D, 947 at 1010.

⁹³ P. U. R. 1916D, 947.

⁹⁴ *Hermann v. Newton Gas Co. (N. Y.)* P. U. R. 1916D, 825.

⁹⁵ *Commercial Club v. Citizens' Gas & Fuel Co. (Ind.)* P. U. R. 1916E, 1 at 7.

⁹⁶ *Re Grafton County L. & P. Co. (N. H.)* P. U. R. 1916E, 879 at 882.

⁹⁷ *Re Dunham (Mo.)* P. U. R. 1916E, 544 at 597; *Re Rates Missouri St. Ry. Co. (Mo.)* P. U. R. 1916C, 607 at 618.

⁹⁸ *In re Northampton Gas Petition (Mass.)* P. U. R. 1915A, 618 at 626; *Bay State Rate Case (Mass.)* P. U. R. 1916F, 221.

⁹⁹ *Public Service Comm. v. Steamboat Canal Co. (Nev.)* P. U. R. 1915F, 718 at 721.

¹⁰⁰ *Butler v. Lewiston, A. & W. St. Ry. Co. (Me.)* P. U. R. 1916D, 25 at 35.

¹⁰¹ *Re Cripple Creek Water Co. (Colo.)* P. U. R. 1916C, 788 at 799.

the subject most attention.¹⁰² And the courts are not so committed to any theory as to prevent their general adoption of this. Efficient investment was strongly approved in cases before *Smyth v. Ames* already noticed,¹⁰³ approving it as the "basic criterion of revenue to be allowed," and recent cases are not wanting which, like *Coal & Coke Railway Company v. Conley*,¹⁰⁴ look with strong favor upon it as the correct base. The most difficult rule of the courts to meet would be that they have often said present value must govern, and this may be less than cost—in which case the company must bear the loss—or more—in which case the company is entitled to the gain. This introduces the speculative into public utilities and is unfortunate. If the courts do not feel at liberty to change from the uncertainties of *Smyth v. Ames*, then the legislatures should do it for them. Congress seems already to have considered this in its discussion of the Railway Valuation Act before referred to.

There has been so much antagonism because of past injustices that it has been hard to realize that ultimately the highest good of the public and of investors in public utilities are one. To secure a good service it is to the public interest to make investment in public utilities attractive, and to give a return on such investment not merely equal to, but somewhat higher than, returns in kindred private enterprises. Returns should not be too high, however, or they will attract not the investing public, but speculators and manipulators, to the detriment alike of the public and of honest investors. It is also to the public interest to assure, as far as possible, to the investor in public utilities, a return on what is really put into the utility, in good faith and with prudence and good judgment. Such a condition would do much to substitute for the antagonism and often unreasonable suspicion now existing between the public and public service companies that harmonious and understanding relation based upon mutual respect for rights and observance of duties, that is so needed to make public service satisfactory. Once past the initial difficulties, which are not at all insurmountable, the "efficient investment" theory will insure between the public and public utilities a relationship which is fair to both, which will attract the necessary capital by making the investment almost as safe as governmental securities, and which will make possible and probable an adequate and efficient service.

EDWIN C. GODDARD

University of Michigan Law School.

¹⁰² Whitten, *Valuation of Public Service Corporations*, 83 ff., 835. But contra see a recent article: *The United States Supreme Court and Rate Regulation*, 64 *Univ. of Penna. L. Rev.* 1, by Douglas D. Storey; and *Legal Basis of Rate Regulation*, 11 *Col. L. Rev.* 532 at 538, 545, by Edward C. Bailly.

¹⁰³ See *San Diego Water Co. v. San Diego* (1897) 118 *Calif.* 556 at 568.

¹⁰⁴ (1910) 67 *W. Va.* 129 at 191.